

Amendments to the Claims

Please amend the claims as follows:

1. (Currently Amended) A signal processing apparatus, comprising:
a feedback signal reception unit receiving status information of at least one channel;
a data block segmentation unit receiving ~~a one of the first data block blocks~~ to segment into ~~at least one or more of the second data blocks~~;
a CRC attachment unit attaching a CRC to each of the ~~at least one or more of the second data blocks~~;
a data block allocation unit allocating each of the at least one or more of the second data blocks according to an antenna via which the at least one or more of the second data blocks will be transmitted; and
at least one antenna or more antennas to transmit the at least one or more of the second data blocks,
wherein the CRC is differently attached to each of the one or more second data blocks.
2. (Canceled)
3. (Canceled)
4. (Currently Amended) ~~The signal processing apparatus of claim 3, A signal processing apparatus, comprising:~~
~~a feedback signal reception unit receiving status information of at least one channel;~~
~~a data block segmentation unit receiving a first data block to segment into one or more second data blocks;~~
~~a CRC attachment unit attaching a CRC to each of the one or more second data blocks;~~

a data block allocation unit allocating the one or more second data blocks according to an antenna via which the one or more second data blocks will be transmitted;

at least one antenna to transmit the one or more second data blocks; and
an antenna selection unit determining which of the at least one antenna
will transmit each of the one or more second data blocks,

wherein the antenna selection unit makes the determination determines
the antenna via which the at least one second block will be transmitted according to the
status information received by the feedback signal reception unit.

5. (Canceled)

6. (Canceled)

7. (Currently Amended) In a mobile communication system having a plurality of transmitting antennas, a signal processing method comprising the steps of:

receiving a feedback signal including status information of at least one channel;

segmenting ~~one of a~~ the first data block blocks to segment into at least one or more ~~of the~~ second data blocks;

attaching a CRC to each of the ~~at least~~ one or more ~~of the~~ second data blocks;

allocating the ~~at least~~ one or more ~~of the~~ second data blocks to the a plurality of ~~the~~ transmitting antennas, respectively; and

transmitting the ~~at least~~ one or more ~~of the~~ second data blocks,
wherein the CRC is differently attached to each of the one or more second data blocks.

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Currently Amended) ~~The signal processing method of claim 9, In a mobile communication system having a plurality of transmitting antennas, a signal processing method comprising the steps of:~~

receiving a feedback signal including status information of at least one channel;

segmenting a first data block into one or more second data blocks;
attaching a CRC to each of the one or more second data blocks;
allocating the one or more second data blocks to the plurality of transmitting antennas;

selecting the transmitting antennas via which the at least one or more of the second data blocks will be transmitted, and

transmitting the at least one or more of the second data blocks;
wherein the transmitting antennas via which the one or more second data blocks will be transmitted are selected according to the received channel status information.

13. (Canceled)

14. (Canceled)

15. (New) An apparatus for signal processing, comprising:
an attachment unit for attaching a cyclic redundancy check (CRC) to each of the at least two data blocks; and
a plurality of antennas for transmitting each CRC-attached data block via each of the plurality of antennas to a single user equipment (UE),

wherein the CRC is differently attached to each of the at least two data blocks.

16. (New) The apparatus of claim 15, further comprising:
 - a feedback signal reception unit for receiving positive acknowledgement (ACK) or a negative acknowledgement (NACK) of at least one channel;
 - a data block segmentation unit for segmenting each of the plurality of data blocks into at least two segmented data blocks; and
 - a data block allocation unit for allocating the at least two segmented data blocks to the plurality of antennas.
17. (New) The apparatus of claim 15, further comprising an antenna selection unit selecting one of the plurality of antennas for transmitting the at least two data blocks.
18. (New) The apparatus of claim 15, wherein the at least two data blocks are segmented blocks processed by a data block segmentation unit.
19. (New) The apparatus of claim 15, wherein the plurality of antennas, not selected for transmitting the CRC-attached data block, are used to transmit dummy bits.
20. (New) An apparatus for signal processing, comprising:
 - a signal reception unit for receiving at least one cyclical redundancy check (CRC)-attached data block via at least one of a plurality of antennas;
 - a channel estimation unit for checking the CRC from each of the received CRC-attached data block; and
 - a feedback signal transmission unit for transmitting one of a positive acknowledgement (ACK) and a negative acknowledgement (NACK), based on the CRC check of each of the plurality of antennas.

21. (New) The apparatus of claim 20, wherein the signal reception unit receives dummy bits from the at least one antenna not used for transmitting the CRC-attached data block.

22. (New) A method of transmitting and receiving data blocks in a multiple input, multiple output (MIMO) wireless communication system, the method comprising:

attaching cyclic redundancy check (CRC) to each of the at least two data blocks;

transmitting each CRC-attached data block via each of a the plurality of antennas to a single user equipment (UE);

receiving at least one CRC-attached data block via at least one of the plurality of antennas;

checking the CRC from each of the received CRC-attached data block; and

transmitting a positive acknowledgement (ACK) or a negative acknowledgement (NACK), based on the CRC check of each the plurality of antennas.

23. (New) The method of claim 22, wherein the CRC check is performed to acquire channel quality information.

24. (New) The method of claim 23, wherein the channel quality information is based on quality of the channel through which the CRC-attached data block is transmitted.

25. (New) The method of claim 23, wherein the ACK is generated if the channel quality information is good.

26. (New) The method of claim 23, wherein the NACK is generated if the channel quality information is bad.

27. (New) The method of claim 22, wherein the at least two data blocks are processed as segmented blocks.

28. (New) The method of claim 22, wherein the plurality of antennas not selected for transmitting the CRC-attached data block are used to transmit dummy bits.

29. (New) A method of transmitting data blocks in a multiple input, multiple output (MIMO) wireless communication system, the method comprising:

transmitting each cyclic redundancy check (CRC) with at least two data blocks attached via each of a plurality of antennas to a single user equipment (UE), wherein the CRC is attached to each of the at least two data blocks.

30. (New) The method of claim 29, wherein the at least two data blocks are processed as segmented blocks.

31. (New) The method of claim 29, wherein the plurality of antennas not selected for transmitting the CRC-attached data block are used to transmit dummy bits.

32. (New) A method of receiving data blocks in a multiple input, multiple output (MIMO) wireless communication system, the method comprising:

receiving at least one cyclic redundancy check (CRC) with data block attached via at least one of a plurality of antennas;

checking the CRC from each of the received CRC-attached data block; and

transmitting one of a positive acknowledgement (ACK) and a negative acknowledgement (NACK), based on the CRC check of each of the plurality of antennas.

33. (New) The method of claim 32, wherein at least one of the plurality of antennas receives dummy bits from the at least one antenna not used for transmitting the CRC-attached data block.

34. (New) The method of claim 32, wherein the CRC check is performed to acquire channel quality information.

35. (New) The method of claim 34, wherein the channel quality information is based on quality of the channel through which the CRC-attached data block is transmitted.

36. (New) The method of claim 34, wherein the ACK is generated if the channel quality information is good.

37. (New) The method of claim 34, wherein the NACK is generated if the channel quality information is bad.